SUPERFUND RESPONSE ACTION PRIORITY PANEL REVIEW FORM

Date Form Completed: February 14, 2012

General Site Information

Region:	2	City:	New York	State:	New York
CERCLIS EPA ID:	NJD064263817		CERCLIS Site Name:	Syncon Resins Superfund Site	
NPL Status: (P/F/D)	Final		Year Listed to NPL:	September 1, 1983	

Brief Site Description: *(Site Type, Current and Future Land Use, General Site Contaminant and Media Info, Site Area and Location information.)*

The Syncon Resins site is located at 77 Jacobus Avenue in Kearny, Hudson County, New Jersey. The site encompasses approximately 15 acres, abuts the Passaic River on the west, and is located on the upper northwest side of a low-lying, narrow peninsula known as Kearny Point.

Syncon Resins produced alkyd resin carriers for pigments and varnishes. Various chemical manufacturing facilities, hazardous waste transporters, manufacturing companies, petroleum facilities, and storage terminals are situated within the immediate area. Most of the company's business consisted of reprocessing of off-specification resins purchased from other manufacturers. Six main buildings and seven ancillary structures were used in process-related activities on the site. There were at least two chemical reactor buildings containing stainless steel vessels, various other buildings and structures, numerous large bulk storage tanks, two unlined lagoons that had been used for discharging process wastewater, and an unknown number of underground tanks and associated piping systems.

Soil borings and past investigations show that fill was placed to level most of the site property to allow construction of various buildings and equipment for manufacturing operations. Site topography is highest in the northeast corner of the property where the ground elevation is about eight feet above mean sea level. A four to five-foot high berm is also present in this area and surrounds a former tank farm. Much of the southeast and southwest areas of the property are covered by buildings, pavement, or concrete pads. The topography drops off over a distance of 60 to 175 feet to the west of a slurry wall along the current Passaic River shoreline.

The shallow aquifer in the area is not utilized for any purpose. Groundwater from the confined or deeper aquifer within the area is utilized for industrial purposes. Potable water for the area's users is supplied by municipal water purveyors.

The site was abandoned by its former operators. The New Jersey Department of Environmental Protection (NJDEP) continues to operate, maintain, and monitor a groundwater extraction and treatment system to contain groundwater contamination. The site is located in a heavily industrialized area. Various chemical manufacturing facilities, hazardous waste transporters, manufacturing companies, petroleum facilities, and storage terminals are situated within the immediate area. Adjacent facility owners and others have expressed interest in purchasing the property to be developed for commercial and industrial use.

Soil and groundwater at the site are highly contaminated. Principal threat waste exists at the site including free product contaminated with polychlorinated biphenyls (PCBs), grossly contaminated soils with free product containing PCBs, and contaminated soils with PCB concentrations exceeding 500 milligrams per kilogram (mg/kg). The grossly contaminated soils are considered those that contain visibly identifiable free or otherwise readily detectable free or residual product.

Although the groundwater is classified by the State of New Jersey as IIA – a drinking water aquifer, it is not currently used for such purposes and not likely to be used in the future. Presently, the effluent from the on-site treatment facility discharges into the Passaic River.

General Project Information

Type of Action:	Remedial	Site Charging SSID:	0233
Operable Unit:	2	CERCLIS Action RAT Code:	

Is this the final action for the site that will result in a site construction completion?	X Yes	☐ No
Will implementation of this action result in the Environmental Indicator for Human Exposure being brought under control?	X Yes	☐ No

Response Action Summary

Describe briefly site activities conducted in the past or currently underway:

In 1982, a limited site investigation showed widespread contamination. Within the deeper aquifer, six contaminants (benzene, methylene chloride, tetrachloroethylene, chloroform, carbon tetrachloride and PCBs) exceeded ambient water quality criteria (AWQC). Shallow groundwater was grossly contaminated with 24 organic compounds, of which 14 exceeded AWQC. Thirteen of these contaminants were found at extremely high concentrations [greater than 760 parts per million (ppm)], with nine of them present in the groundwater at percent levels (parts per hundred). Seven contaminants found in the shallow groundwater could not be compared to water quality criteria because no criteria exist for these compounds.

In 1984, a total of 12,824 55-gallon drums of off-specification resins, raw materials, wastes and solvents stored at various locations on the site were removed by NJDEP. From May 1985 to April 1986, NJDEP conducted a remedial investigation (RI). The sampling performed during the RI indicated extensive on-site contamination in vessels and tanks, soil, groundwater, and building dirt/dust. Four general classes of chemical contaminants were found on-site: organic compounds (volatiles and base/neutral extractables, pesticides, polychlorinated biphenyls, and metals. The organic compounds were common raw materials and/or resin components, and the metals detected in samples were probably from metallic oxides or organo-metallic compounds utilized as pigments or catalysts in the production processes.

Materials encountered at the ground surface of borings performed during subsurface investigations were sand, concrete or fill material depending on their locations on the property. Sands at the ground surface at a number of boring locations were visibly contaminated, giving a black and oily appearance. Asphalt and fill material of various thicknesses were encountered during drilling of some of the monitoring wells. Those obstructions impede groundwater flow.

Operable Unit 1 (OU1) remedial construction activities commenced in May 1990. They included removal of contaminated materials contained in storage tanks, lagoon liquids and sediments, and surface soils; the decontamination of buildings and tanks; installation of a gravel cover over the site to allow natural flushing of underlying soil; installation of a cement-bentonite slurry wall; and construction of a contaminated water treatment system (CWTS). Extremely high levels of hazardous materials were removed off-site to reduce exposure including approximately 2,100 cubic yards (CY) of contaminated soil and approximately 970 CY of lagoon sediment. A gravel layer was then placed to cover the entire site. Following completion of these activities, approximately 100 above-ground storage tanks were removed for off-site disposal/recycling. The OU1 remedial construction activities were completed in 1993. The OU1 remedy of natural flushing with groundwater collection and treatment is currently in operation at the site.

RI activities performed under OU-2 included soil and groundwater sampling, a Cone Penetrometer Testing (CPT) investigation, and a Pilot-Scale Field Test to study the movement of contamination in the groundwater. In February and March 1997, a CPT was used to probe the shallow subsurface at approximately 70 locations. The results of this testing revealed that widespread free and/or residual product were still present throughout the site. The depth of free and residual product at many of the probe locations was found to be about six to eight feet below existing grade. Based on the CPT investigation, approximately 30,000 CY of soil were determined to be highly contaminated with free and/or residual product.

The OU2 ROD was issued on September 27, 2000. The major components of the OU2 remedy were: excavation and drainage of about 30,000 CY of contaminated soil from a 2.5-acre area; removal and disposal of buried debris and other obstructions from the excavated areas; off-site treatment/disposal of drained free product from the excavated materials; backfilling of the excavated soil after draining along with the addition of soil amendments; possible restoration of natural hydraulic conditions; discontinuation of the CWTS operation; and establishment of institutional controls to ensure continued commercial/industrial use of the property.

Subsequent information obtained during the remedial design (RD) showed that soil draining would not be effective. This led to a ROD Amendment in September 2010 changing the remedy to off-site disposal of the excavated soil.

Specifically identify the discrete activities and site areas to be considered by this panel evaluation:

The major components of the remedial action selected by EPA in the September 2010 ROD Amendment and to be considered by this panel evaluation include: excavation of soils exceeding remediation goals (RGs); post-remediation sampling to verify achievement of RGs; treatment and/or disposal of excavated soils at off-site facilities in accordance with applicable regulatory requirements; backfilling of recovered existing gravel from completed excavation areas to the bottom portion of the excavation; additional backfilling of excavated areas to existing grade with imported clean fill; and implementation of institutional /engineering controls.

Currently, remedial design activities associated with the amended remedy are underway. In addition, abandoned buildings located on-site will need to be demolished and removed in order to access contaminated areas/materials under foundations.

Briefly describe additional work remaining at the site for construction completion after completion of discrete activities being ranked:

The only remaining elements of the remedial action to be implemented for the site to qualify for construction completion after completion of the discrete activities being ranked involve the establishment of institutional controls (ICs) in the form of an environmental easement and/or restrictive covenant. The ICs will include a deed notice placed on the site property to identify the likely presence of residual contamination to ensure that future intrusive subsurface activities are properly performed. It may also include mitigation measures to prevent vapor intrusion into any buildings to be constructed on the property in the future.

Response Action Cost

Total Cost of Proposed Response Action:

($ amount should represent total funding need for new RA funding from national allowance above and beyond those funds anticipated to be utilized through special accounts or State Superfund Contracts.)

The estimated cost for the selected remedy is $21.5 million. Demolition of the abandoned buildings is estimated to be an additional $3 million for a total cost of $24.5 million.

Source of Proposed Response Action Cost Amount:
(ROD, 30%, 60%, 90% RD, Contract Bid, USACE estimate, etc…)

2010 ROD Amendment and NJDEP's Building Assessment Report.

Breakout of Total Action Cost Planned Annual Need by Fiscal Year:
(If the estimated cost of the response action exceeds $10 million, please provide multiple funding scenarios for fiscal year needs; general planned annual need scenario, maximum funding scenario, and minimum funding scenario.)

The total cost for the response action is $24.5 million. For budget purposes, this funding could be provided over two fiscal years. Funding for building demolition would be required immediately.

Other information or assumptions associated with cost estimates?

N/A

Readiness Criteria

1. Date State Superfund Contract or State Cooperative Agreement will be signed (Month)?

August 2012

2. If Non-Time Critical, is State cost sharing (provide details)?

N/A

3. If Remedial Action, when will Remedial Design be 95% complete?

August 2012

4. When will Region be able to obligate money to the site?

August 2012

5. Estimate when on-site construction activities will begin:

January 2013

6. Has CERCLIS been updated to consistently reflect project cost/readiness information?

Yes, CERCLIS has been updated to reflect the project cost/readiness information.

Site/Project Name:	Syncon Resins

Criteria #1 - RISKS TO HUMAN POPULATION EXPOSED (Weight Factor = 5)

Describe the exposure scenario(s) driving the risk and remedy. Include risk and exposure information on current/future use, on-site/off-site, media, exposure route, and receptors:

The following human receptor groups and exposure routes were evaluated in the human health risk assessment (HHRA) for potential industrial/commercial usage: Current/Future Land-Use Scenario for Trespasser -- ingestion, dermal contact, inhalation of fugitive dust/volatiles; Future Land-Use Scenario for Site Worker -- ingestion, dermal contact, inhalation of fugitive dust/volatiles; and Current/Future Land-Use Scenario for Construction/Utility Worker -- ingestion, dermal contact, inhalation of fugitive dust/volatiles.

The results of the HHRA are that site contamination poses both carcinogenic and non-carcinogenic risks. For the construction/utility worker, the hazard index from PCB exposure exceeds 900 and the carcinogenic risk approaches 10-3.

As for the exposure assumptions, a soil ingestion rate of 100 milligrams per day (mg/day) was used. The skin surface area used in assessing dermal exposure assumes the head, hands, forearms, and lower legs are not covered by clothing. A dermal adherence factor of 0.02 milligrams per square centimeter (mg/cm^2), per EPA's Risk Assessment Guidance (RAGS) Part E, is the geometric mean for commercial/industrial adults (age >18) performing ground-keeping activities. An exposure time of two hours a day was based on best professional judgment taking site conditions into consideration. In addition, adult trespassers could potentially spend up to two hours a day at the site, two days a week in the summer and one day a week in the fall and spring, assuming 13 weeks a season. Exposure duration is expected to be 25 years, the same as for the site worker.

Estimate the number of people reasonably anticipated to be exposed in the absence of any future EPA action for each medium for the following time frames:

MEDIUM	<2yrs	<10yrs	>10yrs
Soil	25	100	>100

Discuss the likelihood that the above exposures will occur:

The numbers above are speculative. They are based on the fact that the site is fenced, which helps prevent exposure to the local populace. However, there is evidence of trespassers on the site property and the presented numbers reflect the likelihood of continued trespassing.

Other Risk/Exposure Information?

There are areas of pure product and/or very high levels of PCBs that are hot spots and considered principle threat wastes. Construction/utility workers potentially could be exposed to these wastes. Similarly, they could be exposed to contaminated groundwater via incidental ingestion and dermal contact pathways.

Although volatile organic compounds (VOCs) generally do not present an unacceptable direct contact risk, their presence in soils suggests that a vapor intrusion risk may be introduced if/when buildings are constructed on the property. Since shallow groundwater flows towards the Passaic River, the potential for VOCs in

groundwater to migrate onto neighboring properties is unlikely. As a result, the vapor intrusion pathway is only a concern for future on-site buildings.

Site/Project Name:	**Syncon Resins**

Criteria #2 – SITE/CONTAMINANT STABILITY (Weight Factor = 5)

Describe the means/likelihood that contamination could impact other areas/media given current containment:

The waste source is generally contained within a cement-bentonite slurry wall. It prevents/reduces the migration of waste onto neighboring properties and the Passaic River. Groundwater contamination on the site is controlled to some degree by an extraction system. However, that system does not achieve complete capture. Its effectiveness is anticipated to improve after removal of the waste source and other buried debris that impede groundwater flow.

Are the contaminants contained in engineered structure(s) that currently prevents migration of contaminants? Is this structure sound and likely to maintain its integrity?

The contaminants are generally contained within a cement-bentonite slurry wall constructed at the site. The long-term integrity of the system in contact with the highly contaminated materials is unknown.

Are the contaminants in a physical form that limits the potential to migrate from the site? Is this physical condition reversible or permanent?

The contaminants are not in a physical form that limits their potential to migrate from the site.

Are there institutional physical controls that currently prevent exposure to contamination? How reliable is it estimated to be?

There are no institutional controls in place to prevent exposure to site contamination. However, the property is fenced which deters (but does not eliminate) exposure. Trespassing continues to occur at the site.

Other information on site/contaminant stability?

N/A

Site/Project Name:	**Syncon Resins**

Criteria #3 – CONTAMINANT CHARACTERISTICS (Weight Factor = 3)

(Concentration, toxicity, and volume or area contaminated above health-based levels)

List Principle Contaminants (Please provide average and high concentrations.):

(Provide upper end concentration (e.g., 95% upper confidence level for the mean, as is used in a risk assessment, or maximum value [assuming it is not a true outlier], along with a measure of how values are distributed {e.g., standard deviation} or a central tendency values [e.g., average].)

Contaminant	***Media**	****Concentrations**
PCB - Aroclor 1242	SL	86 mg/kg
PCB - Aroclor 1248	SL	5300 mg/kg
PCB - Aroclor 1254	SL	41 mg/kg

Petroleum Free Product Containing PCBs	SL	Percent Levels
BTEX	GW	65,000 ug/L

*(*Media: AR – Air, SL – Soil, ST – Sediment, GW – Groundwater, SW – Surface Water)*

*(**Concentrations: Provide concentration measure used in the risk assessment and Record of Decision as the basis for the remedy.)*

Describe the characteristics of the contaminant with regards to its inherent toxicity and the significance of the concentrations and amount of the contaminant to site risk. *(Please include the cleanup level of the contaminants discussed.)*

As previously indicated, areas of free product containing PCBs exist throughout the site. PCBs represent the major source of site risk although VOCs could be a factor if future development of the property occurs, in which case vapor intrusion issues may also need to be addressed. The remedial goal for PCBs is to remove any free product contaminated with PCBs and grossly contaminated soils with free product contaminated with PCBs.

The hazard index is greatest for the construction/utility worker at over 900. The carcinogenic risk to both the construction/utility and site worker approaches 10-3.

Describe any additional information on contaminant concentrations which could provide a better context for the distribution, amount, and/or extent of site contamination. *(e.g. frequency of detection/outlier concentrations, exposure point concentrations, maximum or average concentration values, etc.....)*

N/A

Other information on contaminant characteristics?

N/A

Site/Project Name:	**Syncon Resins**

Criteria #4 – THREAT TO SIGNIFICANT ENVIRONMENT (Weight Factor = 3)

(Endangered species or their critical habitats, sensitive environmental areas.)

Describe any observed or predicted adverse impacts on ecological receptors including their ecological significance, the likelihood of impacts occurring, and the estimated size of impacted area:

The site is located on the Passaic River in a highly urbanized area of northern New Jersey. The river system has likely been impacted by the Syncon Resins site as well as other waste sources. The current containment system including the slurry wall and groundwater extraction network is believed to be effective in preventing any further ecological impacts.

Would natural recovery occur if no action was taken? ☐ Yes X No
If yes, estimate how long this would take.

N/A

Other information on threat to significant environment?

N/A

Site/Project Name:	**Syncon Resins**

Criteria #5 – PROGRAMMATIC CONSIDERATIONS (Weight Factor = 4)

(Innovative technologies, state/community acceptance, environmental justice, redevelopment, construction completion, economic redevelopment.)

Describe the degree to which the community accepts the response action.

The community accepts and supports the response action and wants the property to be put back into productive use.

Describe the degree to which the State accepts the response action.

The State of New Jersey has concurred with the response action and is prepared to provide the necessary matching cost share.

Describe other programmatic considerations, e.g., natural resource damage claim pending, Brownfields site, use of innovative technology, construction completion, economic redevelopment, environmental justice, etc…

The site will achieve construction completion status with the implementation of the subject response action. It is not a complicated remedy which could be achieved within three years or less.

Economic redevelopment of the site is very important to the City of Kearny. Poor economic conditions have hurt the area. The site is considered to be located in a highly desirable industrialized area abutting the Passaic River. EPA has received numerous requests to use the property for redevelopment purposes.